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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/531,369

04/14/2005

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EXAMINER

SHEETS, ELIJAH M

ART UNIT

PAPER NUMBER

2629

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/531,369	<b>Applicant(s)</b> ICHIKAWA, HIROAKI	
	<b>Examiner</b> ELIJAH M. SHEETS	<b>Art Unit</b> 2629	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 April 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/28/2005</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Drawings***

1. Figure 16 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claim 10 is objected to for the following minor informality: applicant uses the phrase "generates an input signal". This should be amended to read "generating an input signal" in order to be grammatically correct. Proper correction is required.

Claim 8 is objected to for being grammatically incorrect. Applicant states "disposed on one of the two substrate". This should be amended to "disposed on one of the two substrates" in order to be correct. Proper correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claim 6 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, claim 6 recites: “wherein the luminance sensor detects an output voltage into which an off current due to light excitation corresponding to luminance of light emitted from the backlight is converted in the state that a thin film device that composes the luminance sensor is sufficiently turned off”. This portion of the claim is unclear. Amendment to improve the clarity of the claim is required.

5. Claim 7 is rejected based on its dependency on claim 6.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in **Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966)**, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows: (*See MPEP Ch. 2141*)

- a. Determining the scope and contents of the prior art;
- b. Ascertaining the differences between the prior art and the claims in issue;
- c. Resolving the level of ordinary skill in the pertinent art; and
- d. Evaluating evidence of secondary considerations for indicating obviousness or nonobviousness.

7. Claims 1, 4, 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wei et al. (US 2003/0137485, hereinafter referred to as Wei) in view of Chang et al. (US 6,914,389, hereinafter referred to as Chang).

**Regarding claim 1**, Wei teaches a liquid crystal display apparatus having a liquid crystal interposed between two substrates ([0024]) and a backlight as a light source for the liquid crystal ([0021]), comprising:

a luminance sensor formed on one of the substrates (this substrate is referred to as the first substrate), the luminance sensor and thin film devices as pixels being formed on the first substrate in the same process ([0025]).

However, Wei fails to explicitly teach the further limitations of present claim 1. Chang, however, teaches a light module for LCDs that includes a control circuit that generates a drive signal that keeps the luminance of the backlight almost constant on the basis of a detection signal detected by the luminance sensor (Col. 2, lines 15-28), and that the luminance sensor detects the luminance of the backlight (Col. 2, lines 15-17). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Wei and Chang for the benefit of achieving uniform illumination of the back light (Chang, Col. 2, lines 27-28).

**Regarding claim 4**, Wei as amended by Chang teaches the liquid crystal display apparatus as set forth in claim 1, wherein the substrate on which the thin film devices are formed when viewed from the liquid crystal side is disposed on the backlight side (Wei [0024], second substrate 64), at least one luminance sensor being disposed in a screen on which the pixels are formed (Chang Fig. 9, items 54A and 54B),

a light shield portion being disposed on the other substrate (this substrate is referred to as the second substrate) so that the light shield portion is opposite to the luminance sensor ([0024], final sentence).

**Regarding claim 5**, Wei as amended by Chang teaches the liquid crystal display apparatus as set forth in claim 1, wherein the second substrate opposite to the first substrate on which the thin film devices are formed is disposed on the backlight side when viewed from the liquid crystal (Wei [0024], second substrate 64), at least one luminance sensor being disposed outside a screen on which the pixels of the thin film devices are formed (Wei Fig 5, item 34), and wherein the liquid crystal display apparatus further comprises:  
a housing that houses the first substrate, the second substrate, the backlight, and the control circuit and that covers the luminance sensor (Chang Fig. 1, item 14).

**Regarding claim 9**, the method as claimed is viewed as inherent to the operation of the device as claimed in claim 1, and is concurrently rejected.

8. Claims 2, 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wei in view of Chang, and further in view of Paolini et al. (US 6,791,636, hereinafter referred to as Paolini).

**Regarding claim 2**, Wei as amended by Chang teaches the liquid crystal display apparatus as set forth in claim 1. However, the combined teaching fails to teach the claim limitations of present claim 2.

However, Paolini teaches an LCD backlight, wherein the backlight includes a light emitting device array (Col. 1, lines 27-29) and a diffusion portion (Col. 1, lines 47-50), the light emitting device array being an arrangement of repetition of at least three color light emitting devices, the diffusing portion that diffuses color rays emitted from the light emitting device array and generates white light (Col. 1, lines 27-30). Therefore, it would have been obvious to one of ordinary skill in the art to combine the LCD with constant backlighting of Wei as amended by Chang with the backlight system of Paolini for the obvious benefit of delivering high quality white light to the SLM.

**Regarding claim 3**, Wei as amended by Chang teaches the liquid crystal display apparatus as set forth in claim 1, but fails to teach the limitations of claim 3.

Paolini, however, teaches the use of a backlight system wherein the backlight includes a light emitting device array (Col. 1, lines 27-29), a diffusion portion (Col. 1, lines 47-50), and a light guide portion, the light emitting device array that is an arrangement of repetition of at least three color light emitting devices in a line shape (Col. 1, lines 27-29 and claim 1, see “at least one”), the diffusion portion that diffuses color rays emitted from the light emitting device array and generates white light (Col. 1, lines 47-50), the light guide portion that equally guides the color rays emitted from the light emitting device array to the entire surface of the diffusion portion (Fig 4, items 48, 49 and Col. 6, lines 27-30).

**Regarding claim 8**, Wei as amended by Chang teaches the liquid crystal display apparatus as set forth in claim 1, but fails to teach the limitations of claim 8.

However, Paolini teaches color filters corresponding to at least three color light emitting devices are disposed on one of the two substrates (Col. 3, lines 18-34),

wherein the luminance sensors are disposed corresponding to the light emitting devices and detect the luminance of each of the colors (Col. 5, lines 19-26 and 32-38), and

wherein the control circuit generates drive signals for the light emitting devices corresponding to the luminance of each of the colors (Col. 5, lines 23-26).

### *Contact*

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eli Sheets whose telephone number is (571) 272-6532. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571) 272-7674. Customer Service can be reached at (571) 272-2600. The fax number for the organization where this application or proceeding is assigned is (571) 273-7674.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Elijah Sheets/

/Amare Mengistu/

Supervisory Patent Examiner, Art Unit 2629



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